Nutrition News

PUBLISHED BY NATIONAL DAIRY COUNCIL - CHICAGO

NUTRITION OF TEEN-AGE GIRLS AND MOTHERHOOD

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An ultimate goal of the science of nutrition is to provide for women a standard of dietary intake that will allow the propagation of infants with maximum potentials for development and for maintaining the best possible physical status throughout life.

When the body is subjected to the augmented physiological activities of reproduction, growth or convalescence, dietary quality and quantity have special significance. Too many young people, particularly girls, show the effects of poor dietary habits. The fact that pregnancy in young women may be superimposed upon a still growing body, already hampered by the effects of past dietary inadequacy, should concern all interested in human welfare.

The knowledge that nutritional diseases may be chronic or acute and their development either sudden or gradual accentuates the importance of consistently supplying individuals with ample amounts of all nutrients, in proper proportions, with appropriate medical guidance. Especially is this true during the reproductive lifetime of women, for investigators warn that health problems may arise later in life as a result of detrimental metabolic disturbances during pregnancy.

Infant growth studies have emphasized the importance of the right kind of food during the formative period. The fact that the infant at birth is nutritionally nine months old is proof sufficient that special consideration should be given to the diet of the mother during gestation. Pregnancy introduces many complex problems because the fetal organism is living in union with the mother and is dependent upon her body for its more or less independent physiologic processes.

The recent tendency toward early marriage and parenthood and the rapidly increasing birthrate gives new significance to the importance of dietary habits for teen-agers. Although the teens are the healthiest years of life, with illness at a minimum, early parenthood has brought the health problems of family life to an increasing proportion of teen-age girls.

A recent report of the Metropolitan Life Insurance Company points out that about one-third of our brides and about one-fourth of the mothers bearing a first child are less than 20 years old. Almost six per cent of the deaths among 18 and 19-year-old girls in the insurance experience were due to pregnancy and child-birth.

Reciprocal relationships exist between fetus, child, adolescent girl and mother. A woman of reproductive age has been influenced by hereditary and environmental factors. The effects of dietary excesses and deficiencies, injury or disease occurring in each preceding epoch of her life are carried over into the next. The continuing effects thereby limit potentials for development and alter metabolic requirements during succeeding stages of maturation.

If a sub-optimal nutritional state develops through prolonged use of submarginal diets, infants and children recover rapidly with improved dietary intake. But the adolescent body tends to resist such nutritional reconditioning procedures with the result that return to health is delayed.

After an inadequate dietary intake of long duration in one or all epochs of life prior to child-bearing, the maternal body at conception faces, not only enlarged requirements for fetal demands and maternal physiological growth, but also the repletion of its deficient nutritive stores.

In a girl, the adolescent period usually includes the years just preceding pregnancy and several years after her own pediatric care has been concluded. The importance of preconceptional stores of various nutritional factors and of the nutritive stress of adolescent adaptation must be recognized to avoid deficiency states in subsequent pregnancy.

Because of its far-reaching effects upon health and welfare, early nutritional preparation of teen-age girls for motherhood needs to be emphasized. The serious effects of nutritional deficiencies in pregnancy may be greatly exaggerated if they are precipitated by the stresses incurred soon after conception. At that time, the young woman may be unaware that she is to become a mother. This fact emphasizes the importance of continually encouraging young people to maintain for themselves the best possible state of health.

Dr. Macy

The individuals who give preconceptional and prenatal medical care have a great responsibility, not only to protect the immediate and future health of the young woman, but also to protect the child to be born from any metabolic imbalances and deficiencies. Provision for adequate dietary intake cannot be left to appetite or vendors of proprietary synthetic mixtures.

In striving to build and maintain the best possible state of health for our potential mothers and their children, the combined efforts of all concerned with human welfare cannot be too great. These efforts involve physicians, nutritionists, dietitians, administrators and teachers in our schools, public health workers, parents, and young people themselves.

APRIL, 1955 • • VOLUME 18 • • NUMBER 4

Four Issues Annually — October — December — February — April

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Glances AT NUTRITION RESEARCH

Dietary surveys combined with physical, biochemical, and clinical observations provide valuable information to nutrition researchers and educators. The abstracts here are of reports of such a survey of Iowa school children.

Adolescent girls diets poorest — Nutrient intakes of girls over 12 years of age fell markedly below NRC allowances, particularly in iron and calcium. This was the finding of a study of intakes of food energy and 10 nutrients by 1,188 Iowa school children between 6 and 18 years of age. Boys tended to have larger energy and nutrient intakes at successive years. Girls 6 to 12 years had similar but less regular increases. After 12 the food energy and nutrient intake of girls remained the same or decreased, except for vitamin C. In each age-sex group about 12, 42, and 46% of the total calories came from protein, fat, and carbohydrate, respectively.

—J. Nut. 54:371 (Nov.) 1954.

Overweight most frequent in girls— In the Iowa study, more girls were overweight than boys; more older girls were overweight than were younger girls. This was true even though the energy and nutrient intake of teen-age girls was poor compared with boys and with younger girls. Although boys regularly increased their energy and nutrient intake, they grew in "spurt-like" fashion. Contrary, the increase in body measurements of girls was quite regular up to 16, despite failure to increase energy and nutrient intake after 12 years of age.

—J. Nut. 54:543 (Dec.) 1954.

Better growth with liberal diets—Children whose diets met the NRC allowances in all respects tended to be slightly taller, heavier, and larger in leg girth than children whose diets provided nutrients at levels lower than the allowances. Hemoglobin and serum alkaline phosphatase concentrations did not reflect differences between children which might be related to their nutrient intakes. Serum levels of ascorbic acid and carotenoids did reflect the dietary intake of vitamins C and A.

—J. Nut. 54:557 (Dec.) 1954.

100% more milk needed—The diets of Iowa school children which met or exceeded the NRC allowances included 4 cups or more of milk daily plus liberal amounts of fruits and vegetables, meats, and cereals. About one-third of the children studied consumed only about half as much milk and vitamin A- and C-rich fruits and vegetables as needed to meet these allowances. On the average, milk provided 20% of the daily calories; milk, fruit, vegetables, meat, and eggs provided 52 to 60%; and cereals, desserts, sweet foods, and fats furnished 40 to 48%. Teenage girls with the less adequate diets consumed a higher percentage of their daily calories from such foods as candy, soft drinks, and sweet desserts.

—J. Amer. Diet. Assn. 31:144 (Feb.) 1955.

TIMELY TOPICS

Dr. Macy

Dr. Macy is well-known, as is the Children's Fund of Michigan, for a lifetime of endeavor, with her associates, in behalf of the nutritional well-being of children and their mothers. She received her Ph.D. degree from Yale University, studying under the historical teacher, Lafayette B. Mendell. Dr. Macy has been recognized by a number of scientific awards, among them an honorary Sc.D. degree from Wayne University; the Borden Award; the Francis P. Garvin Medal; the Norlin Achievement Award; and the 1954 Modern Medicine Award for Distinguished Achievement.

What The Cow Can Do

Consumption of feeds grown on depleted soils apparently does not affect the nutritive value of a cow's milk, according to the recently announced results of a ten-year study at Michigan State College. Two dairy herds were fed hay and grain grown on comparable soils, one which received no minerals, and the other generously fertilized. The milks from both herds were analyzed and fed to experimental animals. The tests revealed no differences in the nutrient content of the milks from these herds, which could be related to the fertility of the soil.

Rice Enrichment

For 800 million people in the world, rice is the staple food and from it they derive 80 to 90 per cent of their total caloric intake. It is believed that the nutritional improvement of marketed rice would provide one of the most plausible early aids to Asia's food problems.

A NEW PROGRAM FOR MEDICAL STUDENTS

By the Educational Dietitians, The Department of Dietetics and Nutrition
University of Kansas Medical Center

Arlene Payne,* Educational Director

The need for more effective learning experiences in diet therapy and nutrition for the prospective physician has become acute. This is due to an increased awareness of the importance of nutrition and an increased emphasis on diet therapy in the medical field.

Inadequate teaching methods have left the physician handicapped. He is expected to teach in a practical area that which he has learned only in theory. He must prescribe diet but has been given little opportunity to realize the significance in terms of food values, cost, preparation and acceptance. In short, he is expected to be a dietitian with only a few hours of theoretical background.

To combat this deficiency in the training of the medical student, an experimental teaching project is in progress at the University of Kansas Medical Center. At the present time the project is being conducted with senior students during their rotation through the medical out-patient clinic. Earlier in their training these students have had classes in nutrition and diet therapy. Practical experience has included taking nutritional histories and calculating diets but this experience does not solve the problem which arises in the office of the general practitioner.

The purpose of this project is to present a situation simulating that found in office practice. When a student prescribes a dietary modification for a patient assigned to him for medical work-up, the student assumes the responsibility for dietary instructions rather than referring the patient to the Nutrition Clinic. After the student has examined the patient and conferred with the staff doctor, he confers with the staff dietitian in the nutrition clinic before instructing the patient. The dietitian offers guidance to the student in instructing the patient.

Special diet sheets have been prepared for use in this project. They are designed to include the usual written information given to the patient together with a list of the total foods allowed for the day. No set meal plan is included but space is provided for the meal plan to be written in by the student while he discusses it with the patient. This helps to personalize the diet, yet requires minimum time.

When the student feels he has completed the instruction, the dietitian helps him to evaluate the effectiveness of his teaching and motivation of the patient. To do this, she interviews the student and patient together and later confers with the student alone. A weekly class is held for the students which is spent in group discussion of the problems encountered.

We do not feel at this time we can offer any conclusions in regard to the effectiveness of this method of teaching. The project is relatively new. We can say, however, that the main obstacle has been to find time in the medical student's clinic schedule for these dietary consultations. Possible solutions to this problem have been discussed with staff doctors in the medicine clinic. Cooperation of these doctors has been one of the essential factors in carrying out the project.

Some students have been reluctant to assume the responsibility for the dietary instruction primarily because of feelings of inadequacy in this area. This fact offers further evidence that there is need for this type of experience. There is general agreement among the students after giving several instructions that it is well worth the time spent. We feel the program has merit and deserves further trial.

* Arlene Payne, in collaboration with Elizabeth McCune of the department prepared this article on the cooperative project of the department of Dietetics and Nutrition, Ruth Gordon, Director.

A STUDY OF FOOD HABITS IN NEW MEXICO

By Dorothy B. Hacker, Nutrition Consultant
New Mexico Department of Public Health

Data on food habits in New Mexico had been collected from time to time in various parts of the state and among different cultures. However, no data had been assembled on the state as a whole prior to 1949. In that year the New Mexico Agricultural Experiment Station and the Maternal and Child Health Division of the New Mexico Department of Health set up a cooperative project to collect such data. The object of this study was to show whether sufficient amounts of the important food groups were being eaten and which, if any, needed special emphasis.

No special surveys or clinics were held. Data were collected in existing well child conferences, preschool, school and orthopedic clinics and from written food histories kept by school children. This sampling represented one percent or more of the estimated number of families in each county. In most areas, a cross section of the population was represented. Data were collected during all seasons but were not available for all seasons for each county. The food histories were taken by nutritionists who used uniform techniques.

There are three distinct cultural groups in New Mexico: the Indians, the Spanish-speaking descendants of the Spanish explorers, and the English-speaking "Anglos." New Mexico contains such varying geographical and climatic, as well as cultural conditions that no one area is representative. It proved best to present the findings of the study from each county.

This survey showed that, in general, diets tended to be low in: milk, other protein foods, foods rich in vitamin C, whole grain bread and cereals, and green or yellow vegetables. Findings are comparable to those of similar studies in other states except that the intake of protein foods probably is lower. Also, in some areas an appreciable amount of the protein is from bread, cereals, and dried beans.

Factors influencing food selection vary considerably but those most frequently encountered are cost, failure to realize the importance of certain foods in relation to health, and preference for other foods.

These factors, especially failure to appreciate its importance, appear of striking influence on use of milk. While its use varies widely, even in adjoining counties, milk was not used in recommended quantities in any county. Nor was there any correlation between local production and use. In some isolated areas, safe fresh milk was sometimes unavailable, but evapo-

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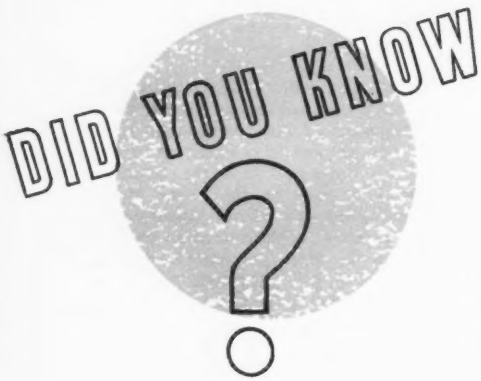

—that the United States Public Health Service has announced two all-time records for 1954, the highest birth rate, 4 million babies, and the lowest death rate in the nation's history?

—that of 174 different ice cream flavors made last year only three—vanilla, chocolate and strawberry, made up 72 per cent of the entire volume of ice cream manufactured?

—that an electronic computer at Los Alamos Scientific Laboratory will "build" artificial protein molecules at random from any of 20 different amino acid building blocks, enabling scientists to study protein structure by comparing the "built" proteins with those found in nature?

—that earthenware cheese pots were discovered in the tomb of King Horaha of Egypt's First Dynasty (3200 B.C.), indicating that the art of cheesemaking was known to the ancient Egyptians?

—that Cuba has recently passed a law requiring that all wheat flour sold in that country be enriched with thiamine, riboflavin, niacin and iron?

—that the Irish were the world's leading per capita consumers of milk and dairy products in 1953, consuming an average of one and three-fourths quarts of milk or its equivalent per person a day?

THINGS YOU'LL LIKE TO READ

Nutrition Committee News — Human Nutrition Research Branch of the U. S. Department of Agriculture's Research Service, Washington, D. C.

This periodical is prepared in consultation with an interagency committee on Nutrition Education and School Lunch for the purpose of exchanging information on these activities. The November-December issue, 1954, is a discussion of the effects of improved diets on the development of children in institutions, written by Ethel Austin Martin.

The Epidemiology of Health — Iago Galdston, editor. Health Education Council, New York Academy of Medicine, New York. 1953. $4.00.

Prepared by physicians, this book clearly presents the concept of the healthy mass and offers practical suggestions on achieving the objective of health in mass populations.

Nutritional Studies in Adolescent Girls and Their Relation to Tuberculosis—Joseph A. Johnston. Charles C. Thomas. Springfield, Illinois. 1953. $7.50.

A record of a twenty-year nutritional and metabolic study on adolescent girls, most of whom had tuberculosis, done at the Henry Ford Hospital, Detroit.

A STUDY OF FOOD HABITS IN NEW MEXICO

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rated milk was available. Yet for many, the only milk reported was that received with the school lunch or used on cereal. The importance of sufficient milk in the diets of New Mexicans must be considered, not only for its calcium and vitamin content but for supplementing the protein found in dried beans, cereals and breads.

The use of other protein foods of such supplementary value—meat, eggs, cheese—varied widely, perhaps due to cost and availability, but in general was low. Probably the most desirable procedure is to stress using milk in the meal where dried beans, bread or cereal forms the main dish, and thus increase milk intake and improve the quality of the dietary protein.

There is, then, a real need to increase the use of milk and other protein foods through teaching their importance, relative food values and cost. In some areas, the old cultural pattern of dried beans daily appears to lose social status in favor of meat, even if there is money for only a little meat. These people need to recognize the value of their dried beans. Frequently, if money for food is limited, purchase of milk is reduced to have meat.

Foods rich in vitamin C were another major deficiency. Physical evidence of this is often seen in spongy, bleeding gums. Early settlers used wild greens, prickly pear cactus, rose hips, wild berries. Their use is largely discontinued but citrus fruits, tomatoes, cabbage and greens have not replaced them. Chile is still well used and could be encouraged. One fresh, canned or frozen chile equals an orange in vitamin C. More education is needed in the use of vegetables. The school lunch can be a major help in cultivating the taste for them. It is observed that even if there is more food money, use of vegetables is not increased markedly.

In the past, many families in parts of New Mexico grew their wheat and had it ground at local mills, which have now disappeared. Most of the home-made bread and tortillas use flour which is neither whole grain nor enriched. Here again education is needed, and is more effective with cereals. It seems easier to change food habits in use of cereals than of breads.

The data from this study have been assembled in a bulletin which presents food habits in the state as a whole and probable factors underlying the variations. There are separate reports on each county and in special groups, as Pueblo and Navajo Indians.

This information, in the hands of extension, health and welfare workers, teachers and others teaching nutrition, is helping them see the food problems of each locality with more understanding and make more effective approaches for gradual improvements.